SRP-250 SERIES

SAMSUNG
ELECTRONICS

1 STATION PRINTER

Operator's Manual

All specifications are subjected to change without notice

Warning - U.S.

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates uses, and can radiate radio frequency energy and if not installed and used according to the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice - Canada

This Apparatus complies with class "A" limits for radio interference as specified i n the Canadian department of communications radio interference regulations.

Get appareil est conforme aux normes class "A" d'interference radio tel que specifier par ministre canadien des communications dans les reglements d'interference radio.

Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard   the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

INTRODUCTION

The SRP-250 and SRP-250P Roll Printer are designed for use with electronic instruments such as system ECR, POS, banking equipment, computer peripheral equipment, etc.

The main features of the printer are as follows:

1. High speed printing : 3.5 lines per seconds.
2. 2 color dot-matrix printer.
3. RS-232 serial interface (SRP-250). Parallel interface (SRP-250P)
4. The data buffer allows the unit to receive print data even during printing.
5. Peripheral units drive circuit enables control of external devices such as cash drawer.
6. Characters can be scaled up to 64 times compared to its original size.
7. Bar code printing is possible by using a bar code command.
8. Different print densities can be selected by DIP switches.

Please be sure to read the instruction in this manual carefully before using your new SRP-250/SRP-250P.

```
NOTE : The socket-outlet shall be near the equipment and it
         shall be easy accessible.
```
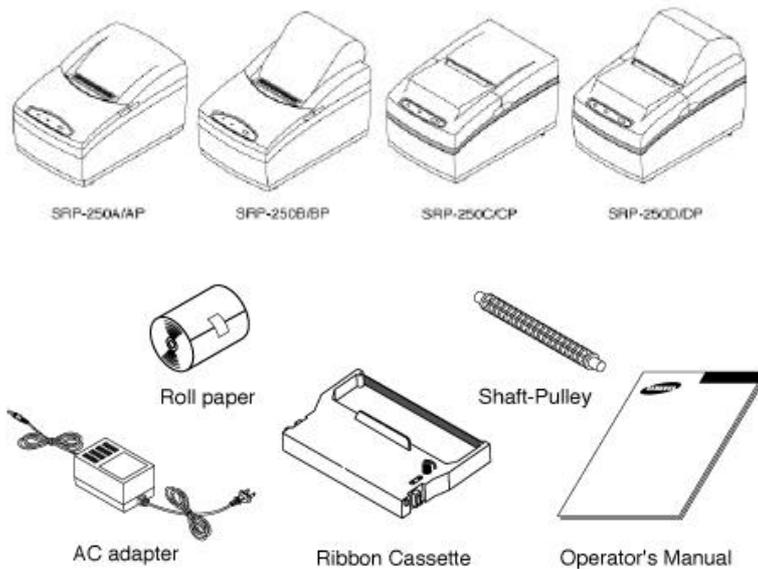
Table of Contents

Chapter 1. Unpacking

1-1. Checking the Contents of the printer box

After unpacking the unit, check that all the necessary accessories are included in the package.

SRP-250A/AP   SRP-250B/BP   SRP-250C/CP   SRP-250D/DP

Roll paper   Shaft-Pulley

AC adapter   Ribbon Cassette   Operator's Manual

1-2. Locating the printer

- Avoid locations in direct sunlight or subject to excessive heat.
- Avoid using or storing the printer in the places subject to excessive moisture.
- Do not use or store the printer in a dusty or dirty area. Avoid places subject to intense vibration or shock.
- Choose a stable and horizontal place for proper use of the printer.
- Make sure that there is enough space around the printer so that it can be used easily.

1-3. Functions

- The power switch is used to turn the printer on and off.
- The FEED button is used to feed roll paper.
- The POWER light (green) is on when the printer is turned on and is off when the printer is turned off.
- The ERROR light (red) is on when the printer cover is opened.
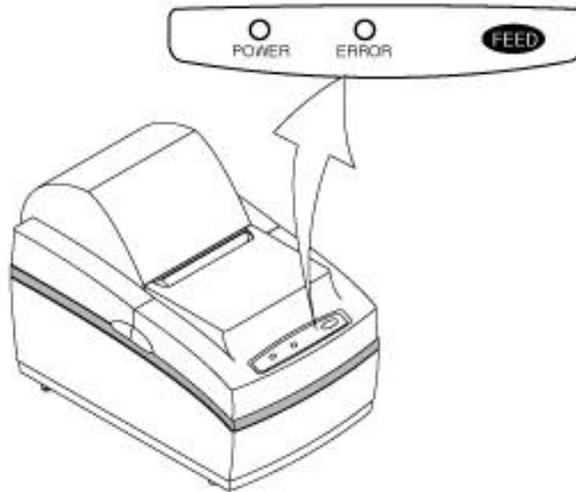
Chapter 2. Connecting the cables

2-1. Connecting the AC adapter to the printer

Power Connector
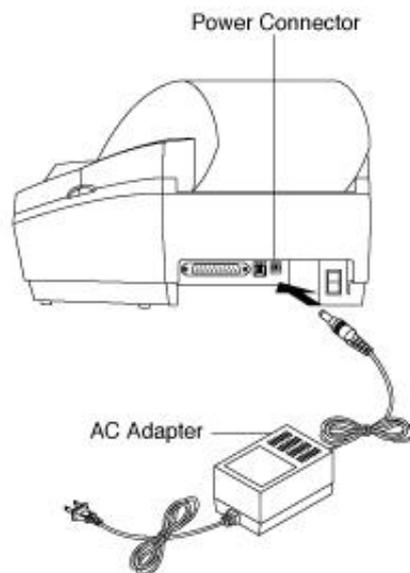
AC Adapter

1). Make sure that the printer is turned off.

2). CHECK the label on the AC adapter to make sure the voltage required by the AC adapter matches that of your electrical outlet.

3). Plug the DC cord connector into the printer's power connector.

4). Plug the AC adapter power cord into the wall outlet.

2-2. Connecting Interface Cable and Drawer Cable to the printer

Connect the Host Computer(POS/ECR) to the printer using an interface cable that matches the specifications of the printer and the Host computer(POS/ECR). Be sure to use a drawer that matches the printer's specification.

 1). Turn off the printer and the Host computer(POS/ECR).
 2). Plug the serial interface cable connector into the printer's interface connector, then tighten the screws on both sides of the connector. In case of the parallel interface, squeeze the wire clips on the printer together until they lock in place on both sides of the connector.
 3). Plug the drawer cable into the drawer kick-out connector on the back of the printer next to the serial/parallel connector. Do not connect a telephone line to the drawer kick-out connector; otherwise the printer and the telephone line may be damaged.

Drawer Kick-Out Connector

Interface Connector

Serial/ Parallel Interface Cable

Drawer Kick-Out Cable
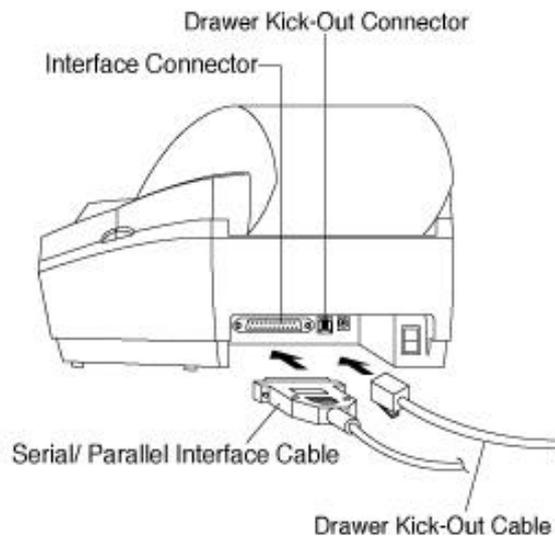
Chapter 3. Installing the roll paper

3-1. Ribbon Cassette Installation

1). Before inserting the ribbon cassette, turn the knob counterclockwise to prevent twisting the ribbon.

2). Insert the ribbon cassette as shown below and pay particular attention to the placement of the ribbon behind the Print Head.

3). During inserting the ribbon cassette, turn the knob counterclockwise again to make sure the ribbon moves freely in the cassette.
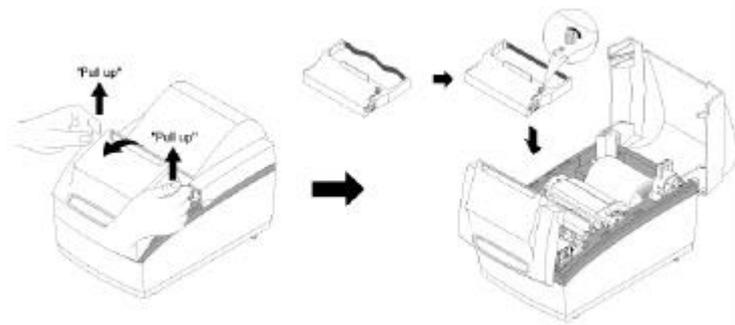
> **NOTE : Malfunctions and other problems may arise if other than the ribbon cassette samsung supplied is used. Samsung does not warrant against problems arising from the use of other than the ribbon cassette samsung supplied**

3-2. Roll Paper Installation

Be sure to use roll paper that matches the printer's specifications.

1). Make sure that the printer has no received data. Otherwise, data may be lost.
2). Open the printer cover and remove the used paper roll core if there is one.
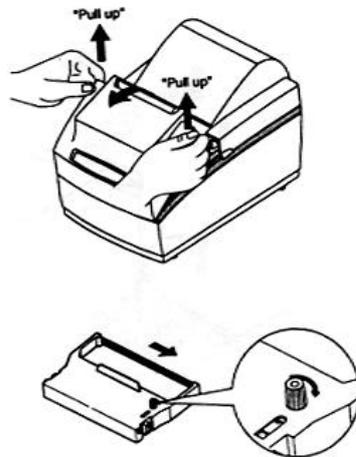
3). To use a new roll paper, unroll the paper and tear off the end of the paper correctly.

Correct   Incorrect   Incorrect
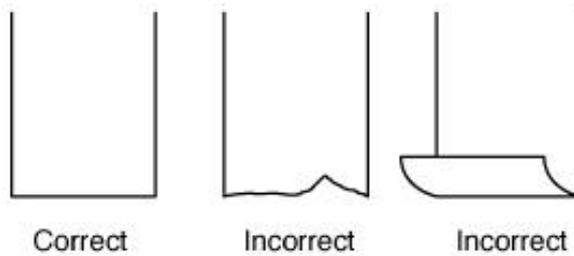
4). Insert the Shaft-Pulley into the hole of roll paper core and load the roll paper on the paper holder. Don't forget to turn the printer's POWER on at this time.
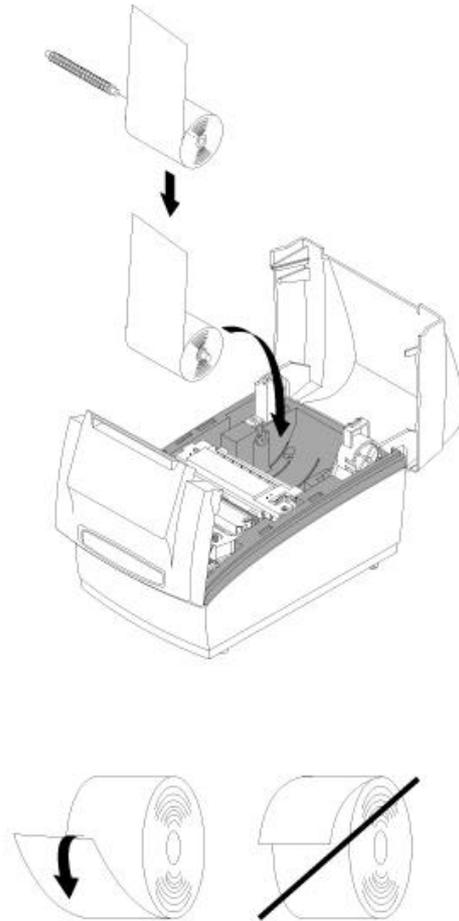
5). Insert the end of the roll paper straight into the paper inlet. The printer feeds the paper automatically(All SRP-250 model) and then the printer will cut the paper automatically(SRP-250C/CP and SRP-250D/DP only).
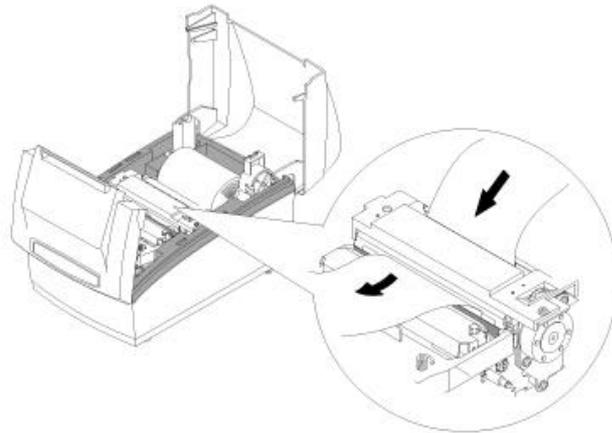
6). Tear off the paper as shown, if necessary.

SRP-250A,AP,B,BP

SRP-250C,CP,D,DP

PUSH

FEED
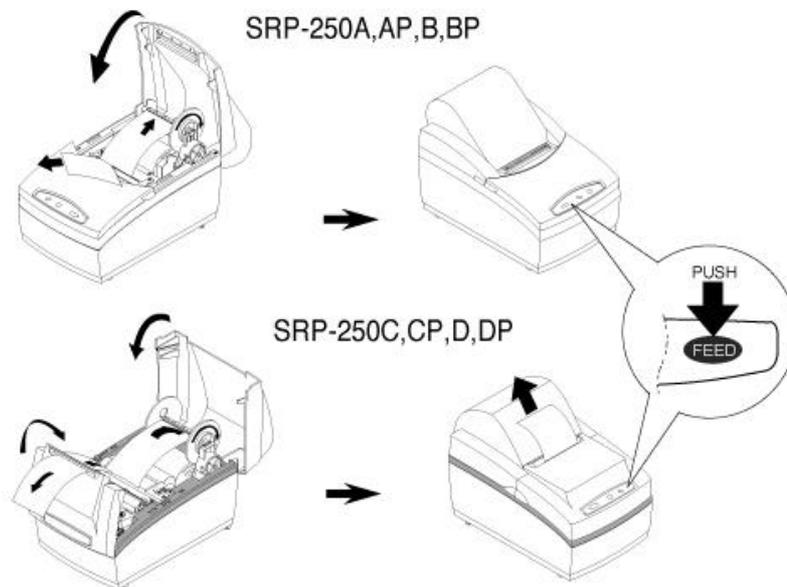
7). Insert the end of the roll paper into the groove on the Roller-Pulley and wrap the paper around the spool two or three times.

SRP-250B/BP
SRP-250D/DP

8). Load the Roller-Pulley onto the groove of the Guide-Pulley.
9). Close the printer cover.
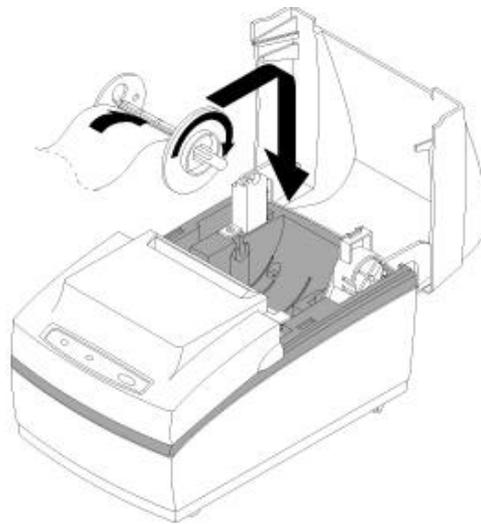
Chapter 4. Setting the DIP switches

The DIP switches are located on the bottom of the printer. The DIP switches are used to set the printer to perform various functions. Follow these steps when changing DIP switch settings :

1. Turn the printer power switch off.

2. Turn the printer over and remove the dip switch cover.

3. Flip the DIP switches using tweezers or another narrow-ended tool. Switches are on when up and off when down in the figure below.

4. The new setting takes effect when you turn on the printer.

SRP-250 Serial   SRP-250 Parallel
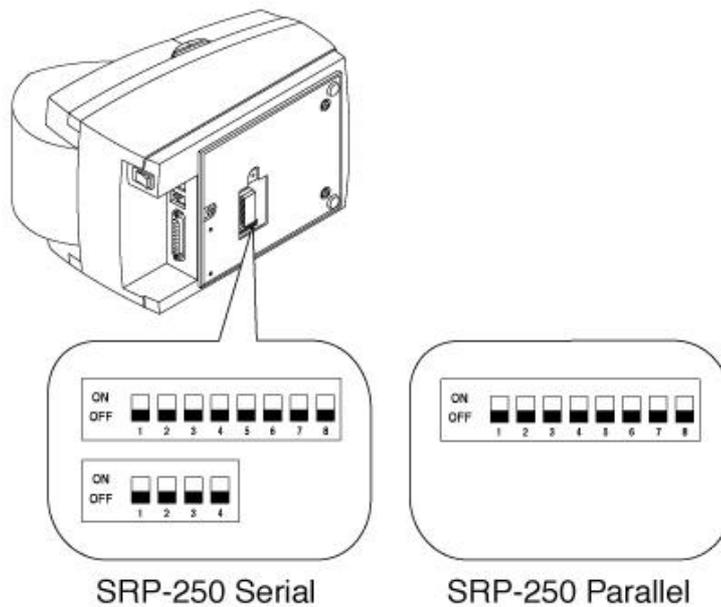
NOTE : Always change DIP switch settings when the printer is turned off. Changes made with the power on have no effect until you turn the printer off and then on again.

Serial Interface Specification

DIP Switch 1 Functions

SW	FUNCTION	ON	OFF	DEFAULT
1	Data Receive Error	Ignore	Print ¡ ?¡ ±	OFF
2	Hand Shaking	XON/OFF	DTR/DSR	OFF
3	Word length	7 bits	8 bits	OFF
4	Parity check	Yes	No	OFF
5	Parity selection	EVEN	ODD	OFF
6	Baud Rate selection	Refer to the following table		OFF
7				OFF
8	Hexadecimal dump	ON	OFF	OFF

● **NOTE : When the word length is 7 bits, you can not parity check OFF status.**

Baud rate selection

Transmission speed	SW – 6	SW – 7
1200 baud	ON	ON
2400 baud	OFF	ON
4800 baud	ON	OFF
9600 baud	OFF	OFF

DIP Switch 2 Functions

MODE	SW – 1	SW – 2
Epson	OFF	OFF
Citizen	ON	OFF
Star	OFF	ON

Parallel Interface Specification

Dip Switch Set Function

SW	FUNCTION	ON	OFF	DEFAULT
1	Reserved			OFF
2	Reserved			OFF
3	Reserved			OFF
4	Reserved			OFF
5	Reserved			OFF
6	Mode Selection	Refer to the following table		OFF
7				OFF
8	Hex Dump	ON	OFF	OFF

Mode Selection

MODE	SW – 6	SW – 7
Epson	OFF	OFF
Star	ON	OFF
Citizen	OFF	ON

Chapter 5. Hexadecimal Dumping

This feature allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

To use the hexadecimal dump function, follow these steps:

1. After you make sure that the printer is off.

2. Set DIP switch 8 to On.

3. Turn on the printer, then the printer enters the hexadecimal dump mode.

4. Run any software program that sends data to the printer. The printer will print all the

   codes it receives in a two-column format. The first column contains the hexadecimal

   codes and the second column gives the ASCII characters that correspond to the codes.

   ```
   1B 21 00 1B 26 02 40 40          . ! . . & . @ @
   02 0D 1B 44 0A 14 1E 28          . . . D . . . . (
   00 01 0A 41 0D 42 0A 43          . . . A . B . C
   ```

   - A period(.) is printed for each code that no ASCII equivalent.
   - During the hex dump, all commands except **DLE EOT** and **DLE ENQ** are disabled.
   - Insufficient print data to fill the last line can be printed by pressing the feed button.

5. When the printing finishes, turn off the printer, and then change DIP switch 8 to OFF.

6. Turn on the printer and then the hexadecimal mode is off.

Chapter 6. The self test

The self-test checks whether the printer has any problems. If the printer does not function properly, contact your dealer. The self-test checks the following;

1. Make sure paper roll has been installed properly.

2. Turn on the power while holding down the FEED button. The self-test begins.

3. The self-test prints the current printer status, which provides the control ROM version and the DIP switch setting.

4. After printing the current printer status, self-test printing will print the following, and pause (The PAPER LED light blinks).

Self-test printing.
Please press the FEED button

5. Press the FEED button to continue printing. The printer prints a pattern using the built-in character set.

6. The self-test automatically ends and cuts the paper after printing the following.

*** completed ***

The printer is ready to receive data when it completes the self-test.

Chapter 7. Code Table

The following pages show the character code tables. To find the character corresponding to a hexadecimal number, count across the top of the table for the left digit and count down the left column of the table for the right digit. For example, 4A = J.

Page 0 (PC437 :   USA, Standard Europe)
(International Character Set : USA)

HEX		8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	á 160	▓ 176	└ 192	ð 208	Ó 224	─ 240
1	0001	ü 129	æ 145	í 161	▒ 177	┴ 193	Ð 209	ß 225	± 241
2	0010	é 130	Æ 146	ó 162	▓ 178	┬ 194	Ê 210	Ô 226	‗ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	Ë 211	Ò 227	¾ 243
4	0100	ä 132	ö 148	ñ 164	┤ 180	─ 196	È 212	õ 228	244
5	0101	à 133	ò 149	Ñ 165	Á 181	┼ 197	ı 213	Õ 229	§ 245
6	0110	å 134	û 150	ª 166	Â 182	ã 198	Í 214	µ 230	÷ 246
7	0111	ç 135	ù 151	º 167	À 183	Ã 199	Î 215	þ 231	¸ 247
8	1000	ê 136	ÿ 152	¿ 168	© 184	╚ 200	Ï 216	Þ 232	° 248
9	1001	ë 137	Ö 153	® 169	╣ 185	┌ 201	┘ 217	Ú 233	¨ 249
A	1010	è 138	Ü 154	¬ 170	║ 186	┴ 202	┌ 218	Û 234	· 250
B	1011	ï 139	ø 155	½ 171	┐ 187	┬ 203	█ 219	Ù 235	¹ 251
C	1100	î 140	£ 156	¼ 172	┘ 188	├ 204	▄ 220	ý 236	³ 252
D	1101	ì 141	Ø 157	¡ 173	¢ 189	─ 205	¦ 221	Ý 237	² 253
E	1110	Ä 142	× 158	« 174	¥ 190	╬ 206	Î 222	¯ 238	■ 254
F	1111	Å 143	ƒ 159	» 175	┐ 191	¤ 207	▀ 223	´ 239	SP 255

Page 2 (PC850 : Multilingual)

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	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	á 160	░ 176	└ 192	╨ 208	α 224	240
1	0001	ü 129	À 145	í 161	▒ 177	┴ 193	╤ 209	β 225	± 241
2	0010	é 130	È 146	ó 162	▓ 178	┬ 194	╥ 210	Γ 226	≥ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	╙ 211	π 227	≤ 243
4	0100	ã 132	õ 148	ñ 164	┤ 180	─ 196	╘ 212	Σ 228	⌠ 244
5	0101	à 133	ò 149	Ñ 165	╡ 181	┼ 197	╒ 213	σ 229	⌡ 245
6	0110	Á 134	Ú 150	ª 166	╢ 182	╞ 198	╓ 214	µ 230	÷ 246
7	0111	ç 135	ù 151	º 167	╖ 183	╟ 199	╫ 215	τ 231	≈ 247
8	1000	ê 136	Ì 152	¿ 168	╕ 184	╚ 200	╪ 216	Φ 232	° 248
9	1001	Ê 137	Õ 153	Ò 169	╣ 185	╔ 201	┘ 217	θ 233	• 249
A	1010	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Ω 234	· 250
B	1011	Í 139	¢ 155	½ 171	╗ 187	╦ 203	█ 219	δ 235	251
C	1100	Ô 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	∞ 236	ⁿ 252
D	1101	ì 141	Ù 157	¡ 173	╜ 189	═ 205	▌ 221	ø 237	² 253
E	1110	Ã 142	₧ 158	« 174	╛ 190	╬ 206	▐ 222	238	■ 254
F	1111	Â 143	Ó 159	» 175	┐ 191	╧ 207	▀ 223	239	SP 255

Page 3 (PC860 : Portuguese)

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	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	¦ 160	▓ 176	└ 192	┴ 208	α 224	240
1	0001	ü 129	È 145	´ 161	▓ 177	┴ 193	┬ 209	β 225	± 241
2	0010	é 130	Ê 146	ó 162	▓ 178	┬ 194	┬ 210	Γ 226	≥ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	└ 211	π 227	≤ 243
4	0100	Â 132	Ë 148	¨ 164	┤ 180	─ 196	└ 212	Σ 228	⌠ 244
5	0101	à 133	Ï 149	¸ 165	┤ 181	┼ 197	┌ 213	σ 229	⌡ 245
6	0110	134	û 150	³ 166	┤ 182	├ 198	┌ 214	μ 230	÷ 246
7	0111	¶ 135	ù 151	─ 167	┐ 183	├ 199	┼ 215	τ 231	≈ 247
8	1000	ê 136	¤ 152	Î 168	┐ 184	└ 200	┼ 216	Φ 232	° 248
9	1001	ë 137	Ô 153	⌐ 169	┤ 185	┌ 201	┘ 217	Θ 233	• 249
A	1010	è 138	Ù 154	¬ 170	│ 186	┴ 202	┌ 218	Ω 234	· 250
B	1011	ï 139	¢ 155	½ 171	┐ 187	┬ 203	█ 219	δ 235	251
C	1100	î 140	£ 156	¼ 172	┘ 188	├ 204	▬ 220	∞ 236	ⁿ 252
D	1101	─ 141	Ù 157	¾ 173	┘ 189	─ 205	▌ 221	ø 237	² 253
E	1110	À 142	Û 158	« 174	┘ 190	┼ 206	▐ 222	238	■ 254
F	1111	§ 143	ƒ 159	» 175	┐ 191	┴ 207	▬ 223	239	SP 255

Page 4 (PC 863 : Canadian - French)

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HEX		8		9		A		B		C		D		E		F	
HEX	BIN	1000		1001		1010		1011		1100		1101		1110		1111	
0	0000	Ç	128	É	144	á	160	▓	176	└	192	┴	208	α	224		240
1	0001	ü	129	æ	145	í	161	▒	177	┴	193	┬	209	ß	225	±	241
2	0010	é	130	Æ	146	ó	162	▓	178	┬	194	┬	210	Γ	226	≥	242
3	0011	â	131	ô	147	ú	163	│	179	├	195	└	211	π	227	≤	243
4	0100	ä	132	ö	148	ñ	164	┤	180	─	196	└	212	Σ	228	⌠	244
5	0101	à	133	ò	149	Ñ	165	┤	181	÷	197	┌	213	σ	229	⌡	245
6	0110	å	134	û	150	ª	166	┤	182	├	198	┌	214	µ	230	÷	246
7	0111	ç	135	ù	151	º	167	┐	183	├	199	┼	215	τ	231	≈	247
8	1000	ê	136	ÿ	152	¿	168	┐	184	└	200	┼	216	Φ	232	°	248
9	1001	ë	137	Ö	153	⌐	169	┤	185	┌	201	┘	217	θ	233	•	249
A	1010	è	138	Ü	154	¬	170	│	186	┴	202	┌	218	Ω	234	·	250
B	1011	ï	139	ø	155	½	171	┐	187	┬	203	■	219	δ	235		251
C	1100	î	140	£	156	¼	172	┘	188	├	204	■	220	∞	236	ⁿ	252
D	1101	ì	141	Ø	157	¡	173	┘	189	─	205	▌	221	ø	237	²	253
E	1110	Ä	142	Pt	158	«	174	┘	190	┼	206	▐	222		238	■	254
F	1111	Å	143	ƒ	159	¤	175	┐	191	┴	207	▀	223		239	SP	255

Page 5 (PC 865 : Nordic)

Country	ASCII code (hexadecimal)											
Hex	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
Dec	35	36	64	91	92	93	94	96	123	124	125	126
U.S.A.	≠	$	@	[	\	]	^	`	{	¦	}	~
France	≠	$	à	°	ç	§	^	`	é	ù	è	~
Germany	≠	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	$	@	[	\	]	^	`	{	¦	}	~
Denmark I	≠	$	@	Æ	Ø	Å	^	`	œ	ø	å	~
Sweden	≠	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	≠	$	@	°	\	é	^	ù	à	ò	è	ì
Spain	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
Norway	≠	¤	É	Æ	Ø	Å	Ü	é	œ	ø	å	ü
Denmark II	≠	$	É	Æ	Ø	Å	Ü	é	œ	ø	å	ü

International Character

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Chapter 8. Control Commands

Command Notation

[Name]	The name of the command.
[Format]	The code sequence.
	ASCII indicates the ASCII equivalents.
	Hex indicates the hexadecimal equivalents.
	Decimal indicates the decimal equivalents.
	[ ] k indicates the contents of the [ ] should be repeated k times.
[Range]	Gives the allowable ranges for the arguments.
[Description]	Describes the function of the command.

Explanation of Terms

LSB	Least Significant Bit

HT

[Name]	Horizontal tab.	
[Format]	ASCII	HT
	Hex	09
	Decimal	9
[Description]	Moves the print position to the next horizontal tab position.	

LF

[Name]	Print and line feed.	
[Format]	ASCII	LF
	Hex	0A
	Decimal	10
[Description]	Prints the data in the print buffer and feeds one line based on the current line spacing.	

CR

[Name]	Print and carriage return.	
[Format]	ASCII	CR
	Hex	0D
	Decimal	13
[Description]	This command is set according to the DIP switch 1-1 setting at power-on. This command is only available with a parallel interface.	

- This command prints the data in the print buffer and does not feed the paper.
- Sets the print starting position to the beginning of the line.

DLE EOT n

[Name]	Real-time status transmission.				
[Format]	ASCII	DLE	EOT	n	
	Hex	10	04	n	
	Decimal	16	4	n	
[Range]	$1 \leq n \leq 4$				
[Description]	Transmits the selected printer status specified by n				
	in real time, according to the following parameters:				
	n = 1 : Transmit printer status.				
	n = 2 : Transmit off-line status.				
	n = 3 : Transmit error status.				
	n = 4 : Transmit paper roll sensor status.				

n = 1 : Printer status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	Drawer open/close signal is LOW (connector pin 3).
	On	04	4	Drawer open/close signal is HIGH (connector pin 3).
3	Off	00	0	On-Line.
	On	08	8	Off-Line.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Not waiting for on-line recovery.
	On	20	32	Waiting for on-line recovery.
6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

n = 2 : Off-line status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	-	-	-	Undefined.
3	Off	00	0	Paper is not being fed by using the PAPER FEED button.
	On	08	8	Paper is being fed by the PAPER FEED button.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No paper-end stop.
	On	20	32	Printing stops due to paper end.
6	Off	00	00	No error.
	On	40	64	Error occurs.
7	Off	00	00	Not used. Fixed to Off.

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n = 3 : Error status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	No mechanical error.
	On	04	4	Mechanical error occurred.
3	-	-	-	Undefined.
4	On	10	16	Not used. Fixed to On
6	Off	00	0	No auto-recoverable error.
	On	40	64	Auto-recoverable error has occurred.
7	Off	00	0	Not used. Fixed to Off.

Bit 2:   Mechanical errors include home position, carriage sensor, and slip ejection errors.

Bits 2 and 3:   If these errors occur due to paper jams or the like, it is possible to recover by correcting the cause of the error and executing **DLE ENQ n** ($1 \leq n \leq 2$). If an error due to a circuit failure (e.g. broken wire) occurs, it is impossible to recover.

Bit 6:   If the print head temperature becomes high, bit 6 is transmitted until the print head temperature drops sufficiently. The printer automatically recovers from this error.

n = 4 : Continuous paper sensor status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	Paper roll end sensor. Paper adequate.
	On	04	4	Paper roll end sensor. Paper end.
3	Off	00	0	Paper roll end sensor. Paper adequate.
	On	08	8	Paper roll end sensor. Paper end.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Paper roll end sensor. Paper present.
	On	20	32	Paper roll end sensor. No paper.
6	On	00	0	Paper roll end sensor. Paper present.
	On	40	64	Paper roll end sensor. No paper.
7	Off	00	0	Not used. Fixed to Off.

DLE ENQ n

	[Name]	Real-time request to printer.			
	[Format]	ASCII	DLE	ENQ	n
		Hex	10	05	n
		Decimal	16	5	n
	[Range]	$1 \leq n \leq 2$			
	[Description]	Recovers from an error after clearing the receive and print buffers.			

- This command is available only with a serial interface, and is ignored with a parallel interface.

ESC SP n

	[Name]	Set right-side character spacing.			
	[Format]	ASCII	ESC	SP	n
		Hex	1B	20	n
		Decimal	27	32	n
	[Range]	$0 \leq n \leq 255$			
	[Description]	Sets the character spacing for the right side of the character to n/160 inches.			

ESC ! n

	[Name]	Select print mode(s).			
	[Format]	ASCII	ESC	!	n
		Hex	1B	21	n
		Decimal	27	33	n
	[Range]	$0 \leq n \leq 255$			
	[Description]	Selects print mode(s) using n as follows.			

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Character font(9×9) selected.
	On	01	1	Character font(9×7) selected.
1,2	-	-	-	Undefined.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized mode selected.
4	Off	00	0	Double-height mode not selected.
	On	10	16	Double-height mode selected.
5	Off	00	0	Double-width mode not selected.
	On	20	32	Double-width mode selected.
6	-	-	-	Undefined.
7	Off	00	0	Underline mode not selected.
	On	80	128	Underline mode selected.

- Determine the values of n by adding the value of all the characteristics you want to select.

ESC % n

[Name]	Select/Cancel user-defined character set.				
[Format]	ASCII	ESC	%	n	
	Hex	1B	25	n	
	Decimal	27	37	n	
[Range]	$0 \leq n \leq 255$				
[Description]	Selects or cancels the user-defined character set.				

When the Least Significant Bit(LSB) is 0, the user-defined character set is canceled and the internal character set is enabled.

When the LSB is 1, the user-defined character set is selected.

[Notes]

• The user-defined character and the downloaded bit image cannot be defined simultaneously.

[Default]   n=0

ESC & y c1 c2 [x1 d1... d(y ´ x1)]... [xk d1... d(yx ´ xk)]

[Name]	Define user-defined characters.				
[Format]	ASCII	ESC	&	n	y c1 c2 [x1 d1... d(y × x1)]...[xk d1... d(yx × xk)]
	Hex	1B	26	n	y c1 c2 [x1 d1... d(y × x1)]...[xk d1... d(yx × xk)]
	Decimal	27	38	n	y c1 c2 [x1 d1... d(y × x1)]...[xk d1... d(yx × xk)]

[Range]   y=2, $32 \leq c1 \leq c2 \leq 126$

   $0 \leq x \leq 12$ (9×9 font)

   $0 \leq x \leq 9$ (7×9 font)

   $0 \leq d1 ... d(y \times x) \leq 255$

[Description]   Defines user-defined characters.

¡ Üy specifies the number of bytes in the vertical direction

¡ Üc1 specifies the beginning character code for the definition, and c2 specifies the final code. For only one character, use c1 = c2.

¡ ÜThe allowable character code range is from decimal code 32 to 126. The maximum number of user-define character is 95.

¡ Üx specifies the number of dots in the horizontal direction.

¡ Üd is the dot data for the characters. The dot pattern is on the horizontal direction from the left side. Any remaining dots on right side are blank.

¡ ÜThe number of bytes required to download a character definition for one character is "y" x "x".

¡ ÜIn the definition data, a "1" represents a dot that is to be printed, and a "0" represents a dot that is not to be printed.

¡ ÜIndependent downloaded character definitions are possible for each font. The font is selected characters are cleared in the following circumstance.

   1.   When 'ESC @" is executed

   2.   When deleted by 'ESC ?"

   3.   When printer is reset or turned off

ESC * m nL nH d1…dk

	[Name]	Select bit-image mode.			
		ASCII	ESC	*	m nL nH d1… dk
	[Format]	Hex	1B	2A	m nL nH d1… dk
		Decimal	27	42	m nL nH d1… dk
	[Range]	m = 0, 1			
		$0 \leq nL \leq 255$			
		$0 \leq nH \leq 1$			
		$0 \leq d \leq 255$			
	[Description]	Selects a bit-image mode using m for the number of dots specified by nL and nH.			

m	No. Vertical Dots	Horizontal Direction		Maximum number of dots
		Dot Density	**Adjacent dot**	
0	8	Single Density	Permitted	180
1	8	Double Density	Prohibited	360

- The nL and nH indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated by nL + nH × 256.
- If the bit-image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
- d indicates the bit-image data. Set a corresponding bit to 1 to print a dot or to 0 not to print a dot.
- The relationship between the image data and the dots to be printed is as follows.
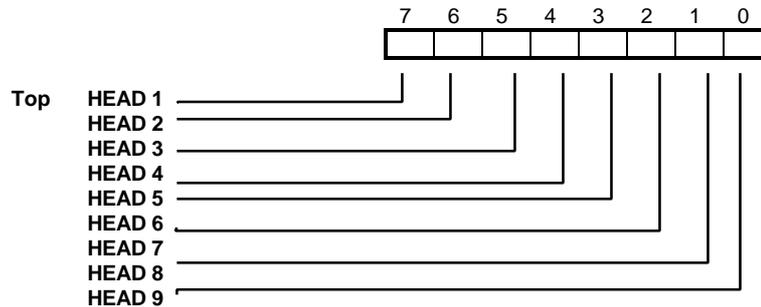
ESC - n

	[Name]	Turn underline mode on/off.		
	[Format]	ASCII	ESC	-	n
		Hex	1B	2D	n
		Decimal	27	45	n
	[Range]	n = 0, 1, 48, 49			
	[Description]	Turns underline mode on or off, based on the following values of n:			
	[Default]	n = 0			

n	Function
0,48	Turns off underline mode.
1,49	Turns on underline mode

ESC 2

[Name]	Select default line spacing.			
[Format]	ASCII	ESC	2	
	Hex	1B	32	
	Decimal	27	50	
[Description]	Sets the line spacing to 1/6-inch line spacing.			

ESC 3 n

[Name]	Set line spacing.			
[Format]	ASCII	ESC	3	n
	Hex	1B	33	n
	Decimal	27	51	n
[Range]	$0 \leq n \leq 255$			
[Description]	Sets the line spacing to [n × vertical or horizontal motion unit] inches.			
[Default]	n=24			

ESC <

[Name]	Return home.			
[Format]	ASCII	ESC	<	
	Hex	1B	3C	
	Decimal	27	60	
[Description]	Moves the print head to the standby position.			

ESC = n

[Name]	Select peripheral device.			
[Format]	ASCII	ESC	=	n
	Hex	1B	3D	n
	Decimal	27	61	n
[Range]	$0 \leq n \leq 253$			
[Description]	Selects device to which host computer sends data, using n as follows:			
[Default]	n=1			

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Printer Disabled.
	On	01	1	Printer Enabled.
1 ~ 7	-	-	-	Undefined

ESC ? n

[Name]	Cancel user-defined characters.			
[Format]	ASCII	ESC	?	n
	Hex	1B	3F	n
	Decimal	27	63	n
[Range]	$32 \leq n \leq 126$			
[Description]	Cancels user-defined characters.			

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ESC @

[Name]	Initialize printer.		
[Format]	ASCII	ESC	@
	Hex	1B	40
	Decimal	27	64
[Description]	Clears the data in the print buffer and resets the printer mode to the mode that was in effect when the power was turned on.		

ESC D n1... nk NUL

[Name]	Set horizontal tab positions.				
[Format]	ASCII	ESC	D	n1... nk	NUL
	Hex	1B	44	n1... nk	00
	Decimal	27	68	n1... nk	0
[Range]	$1 \leq n \leq 255$				
	$0 \leq k \leq 32$				
[Description]	Sets horizontal tab positions.				

- n specifies the column number for setting a horizontal tab position from the beginning of the line.
- k indicates the total number of horizontal tab positions to be set.

ESC E n

[Name]	Turn emphasized mode on/off.			
[Format]	ASCII	ESC	E	n
	Hex	1B	45	n
	Decimal	27	69	n
[Range]	$0 \le n \le 255$ (Only the lowest bit of n is enabled)			
[Description]	Turns emphasized mode on or off.			

• When the LSB of n is 0, emphasized mode is turned off.
• When the LSB of n is 1, emphasized mode is turned on.

ESC G n

[Name]	Turn on/off double-strike mode.			
[Format]	ASCII	ESC	G	n
	Hex	1B	47	n
	Decimal	27	71	n
[Range]	$0 \le n \le 255$			
[Description]	Turns double-strike mode on or off.			

• When the LSB of n is 0, double-strike mode is turned off.
• When the LSB of n is 1, double-strike mode is turned on.

ESC J n

[Name]	Print and feed paper.			
[Format]	ASCII	ESC	J	n
	Hex	1B	4A	n
	Decimal	27	74	n
[Range]	$0 \le n \le 255$			
[Description]	Prints the data in the print buffer and feeds the paper n $\times$ vertical or horizontal motion unit.			

ESC K n

[Name]	Print and reverse feed.			
[Format]	ASCII	ESC	K	n
	Hex	1B	4B	n
	Decimal	27	75	n
[Range]	$0 \le n \le 255$			
[Description]	Prints the data in the print buffer and feeds the paper n $\times$ vertical or horizontal motion unit in the reverse direction.			

ESC R n

[Name]	Select an international character set.			
[Format]	ASCII	ESC	R	n
	Hex	1B	52	n
	Decimal	27	82	n
[Range]	0 ≤ n ≤ 10			
[Description]	Selects an international character set n from the following table.			
[Default]	n=0			

n	Character set	n	Character set
0	U.S.A.	6	Italy
1	France	7	Spain
2	Germany	9	Norway
3	U.K.	10	Denmark 2
4	Denmark 1		
5	Sweden		

ESC U n

[Name]	Turn on/off unidirectional printing mode.			
[Format]	ASCII	ESC	U	n
	Hex	1B	55	n
	Decimal	27	85	n
[Range]	0 ≤ n ≤ 255			
[Description]	Turns unidirectional printing mode on or off.			

- When the LSB of n is 0, turns off unidirectional printing mode.
- When the LSB of n is 1, turns on unidirectional printing mode.

ESC a n

[Name]	Select justification.			
[Format]	ASCII	ESC	a	n
	Hex	1B	61	n
	Decimal	27	97	n
[Range]	0 ≤ n ≤ 2, 48 ≤ n ≤ 50			
[Description]	Aligns all the data in one line to the specified position.			
	n selects the type of justification as follows.			

n	Justification
0,48	Left justification
1,49	Centering
2,50	Right justification

ESC c 3 n

[Name]	Select paper sensor(s) to output paper end signals.				
[Format]	ASCII	ESC	c	3	n
	Hex	1B	63	33	n
	Decimal	27	99	51	n
[Range]	$0 \leq n \leq 255$				
[Description]	Selects the paper sensor(s) to output paper end signals.				
	This command is available only with a parallel interface				
	and is ignored with serial interface.				

- Each bit of n is used as follows.
- This command is available only with a parallel interface and is ignored with a serial interface.

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll end sensor disabled.
	On	01	1	Paper roll end sensor enabled.
1 - 7	-	-	-	Undefined.

ESC c 5 n

[Name]	Enable/Disable panel button.				
[Format]	ASCII	ESC	c	5	n
	Hex	1B	63	35	n
	Decimal	27	99	53	n
[Range]	$0 \leq n \leq 255$				
[Description]	Enables or disables the panel button.				

- When the LSB is 0, the panel buttons are enabled.
- When the LSB is 1, the panel buttons are disabled.

ESC d n

[Name]	Print and feed n lines.			
[Format]	ASCII	ESC	d	n
	Hex	1B	64	n
	Decimal	27	100	n
[Range]	$0 \leq n \leq 255$			
[Description]	Prints the data in the print buffer and feeds n lines.			

ESC e n

[Name]	Print and reverse feed n lines.			
[Format]	ASCII	ESC	e	n
	Hex	1B	65	n
	Decimal	27	101	n
[Range]	$0 \leq n \leq 2$			
[Description]	Prints the data in the print buffer and feeds n lines			
	in the reverse direction.			

ESC m

[Name]	Executes partial cut.		
[Format]	ASCII	ESC	m
	Hex	1B	6D
	Decimal	27	109
[Description]	Executes partial cut with one point uncut.		

ESC p m t1 t2

[Name]	Generate pulse.		
[Format]	ASCII	ESC	p	m t1 t2
	Hex	1B	70	m t1 t2
	Decimal	27	112	m t1 t2
[Range]	m = 0, 1, 48, 49		
	$0 \leq t1 \leq 255$		
	$0 \leq t2 \leq 255$		
[Description]	Outputs the pulse specified by t1 and t2 to connector pin m as follows:		

m	Connector pin
0, 48	Drawer kick-out connector pin 2
1, 49	Drawer kick-out connector pin 5

ESC r n

[Name]	Select print color.		
[Format]	ASCII	ESC	r	n
	Hex	1B	72	n
	Decimal	27	114	n
[Range]	n = 0,1,48,49		
[Description]	Selects a print color, using n as follows.		

n	Print color
0,48	Black
1,49	Red

ESC t n

[Name]	Select character code table.			
[Format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n
[Range]	0 ≤ n ≤ 5, 254 ≤ n ≤ 255			
[Description]	Selects a page n from the character code table.			

n	Page
0	0 (PC437 {USA, standard Europe})
2	2 (PC850 {Multilingual})
3	3 (PC860 {Portuguese})
4	4 (PC863 {Canadian-French})
5	5 (PC865 {Nordic})
19	19(PC858{Euro})

ESC u n

[Name]	Peripheral status.			
[Format]	ASCII	ESC	u	n
	Hex	1B	75	n
	Decimal	27	117	n
[Range]	n = 0			
[Description]	Transmits the peripheral status (drawer).			

After receiving this command, the printer transmits only
1 byte without confirming the condition of the DSR signal.
Transmit data : 01H = drawer open.
                     00H = drawer closed.
• This command is available only with a serial interface, and is ignored
  with a parallel interface.

ESC { n

[Name]	Turns on/off upside-down printing mode.			
[Format]	ASCII	ESC	{	n
	Hex	1B	7B	n
	Decimal	27	123	n
[Range]	0 ≤ n ≤ 255			
[Description]	Turns upside-down printing mode on or off.			

• When the LSB of n is 0, upside-down printing mode is turned off.
• When the LSB of n is 1, upside-down printing mode is turned on.

ESC v

[Name]	Transmit paper sensor status.		
[Format]	ASCII	ESC	v
	Hex	1B	76
	Decimal	27	118
[Description]	Transmits the current paper sensor status.		

- When DTR/DSR control is selected, the printer transmits only 1 byte after confirming that the host is ready to receive data (DSR signal is SPACE).
- If the host computer is not ready to receive data (DSR signal is MARK), the printer waits until the host is ready. When XON/XOFF control is selected , the printer transmits only 1 byte without checking the DSR signal.
- This command is executed when the data is processed in the receive buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on the receive buffer status.
- The status to be transmitted is shown in the table below.
- This command is available only with a serial interface, and is ignored with a parallel interface.

Bit	Off/On	Hex	Decimal	Function
0,1	Off	00	0	Paper roll end sensor. Paper is present.
	On	03	3	Paper roll end sensor. Paper is not present.
2,3	Off	00	0	Paper roll end sensor. Paper is present.
	On	0C	12	Paper roll end sensor. Paper is not present.
4	Off	00	0	Not used.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used.

GS I n

[Name]	Transmit printer ID.			
[Format]	ASCII	GS	I	n
	Hex	1D	49	n
	Decimal	29	73	n
[Range]	$1 \le n \le 3, 49 \le n \le 51$			
[Description]	Transmits the printer ID specified by n as follows:			

n	Printer ID	Specification	ID (hexadecimal)
1, 49	Printer model ID	SRP-250/SRP-250P	0DH
2, 50	Type ID	See table below.	
3, 51	ROM version ID	ROM version	

n=2, Type ID

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Two-byte character code not supported.
1	Off	00	0	Auto cutter not equipped.
2,3	-	-	-	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

[Notes]
- When DTR/DSR control is selected, the printer transmits only 1 byte after confirming that the host is ready to receive data(DSR signal is SPACE). If the host computer is not ready to receive data (DSR signal is MARK), the printer waits until the host is ready. When XON/XOFF control is selected, the printer transmits only 1 byte without confirming the condition of the DSR signal.
- The printer ID is transmitted when the data in the receiving buffer is developed. Therefore, there may be a time lag between receiving this command and transmitting the status, depending on the receive buffer status.

GS V m n

[Name]	Feed paper for cutting position.			
[Format]	ASCII	GS	V	m n
	Hex	1D	56	m n
	Decimal	29	86	m n
[Range]	$65 \le m \le 66, 0 \le n \le 255$			
[Description]	Feeds paper for cutting position as follows:			

m	Print mode
65	Feeds paper (cutting position + [n×(vertical motion unit)]), and cuts the paper Partially.
66	Feeds paper (cutting position + [n×(vertical motion unit)]), and cuts the paper partially.

GS r n

[Name]	Transmit status.		
[Format]	ASCII	GS	r	n
	Hex	1D	72	n
	Decimal	29	114	n
[Range]	$1 \le n \le 2, 49 \le n \le 50$		
[Description]	Transmits the status specified by n as follows.		

n	Function
1, 49	Transmits paper sensor status.
2, 50	Transmits drawer kick-out connector status.

Paper sensor status(n=1, 49):

| Bit	Off/On	Hex	Decimal	Status
0	Off	00	0	Paper roll end sensor: paper adequate.
	On	01	1	Paper roll end sensor: paper end.
1	Off	00	0	Paper roll end sensor: paper adequate.
	On	02	2	Paper roll end sensor: paper end.
2	Off	00	0	Paper roll end sensor: paper present.
	On	04	4	Paper roll end sensor: no paper present.
3	Off	00	0	Paper roll end sensor: paper present.
	On	08	8	Paper roll end sensor: no paper present.
4	Off	00	0	Not used. Fixed to Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Bits 0 and 1 : The "paper roll end" detector is an option; on units that do not
have this detector, the "paper roll end" detector always indicates
that paper is present(bits 0 and i=1), whether or not it actually is.
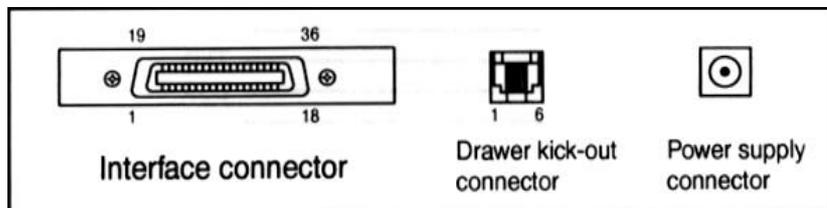
Drawer kick-out connector status(n=2);

Bit	Off/On	Hex	Decimal	Status
0	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	01	1	Drawer kick-out connector pin 3 is HIGH.
1-3	-	-	-	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5-6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off.

Appendix A
Connectors

14 25

1 13

Interface connector

1 6

Drawer kick-out
connector

Power supply
connector
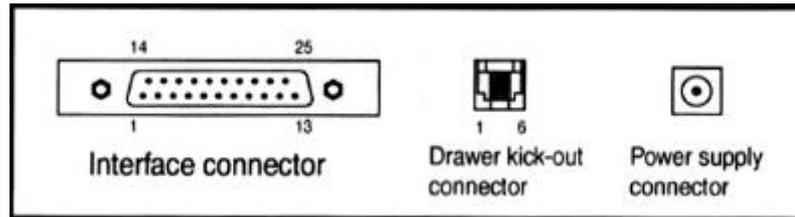
SRP-250 Connector
(Serial Interface)

19 36

1 18

Interface connector

1 6

Drawer kick-out
connector

Power supply
connector

SRP-250P Connector
(Parallel Interface)

Interface Connector

Serial Interface

Pin No.	Signal name	Direction	Function
1	FG	-	Frame Ground
2	TxD	Output	Transmit Data
3	RxD	Input	Receive Data
4	RTS	Output	Request To Send
6	DSR	Input	Data Set Ready
7	SG	-	Signal Ground
20	DTR	Output	Data Terminal Ready

Serial Interface Connection(Example)

Host(DTE ex 8251)   Printer
        TXD ━━━━━━━━━━━━━━ RXD
        DSR ━━━━━━━━━━━━━━ DTR
        RXD ━━━━━━━━━━━━━━ TXD
        DTR ━━━━━━━━━━━━━━ DSR
        S.G ━━━━━━━━━━━━━━ S.G
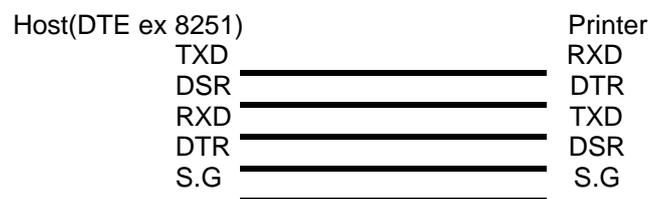
Parallel Interface Connector Pin Assignment

Pin No.	Signal Name	Pin No.	Signal Name
1	STB	19	GND
2	DATA 1	20	"
3	DATA 2	21	"
4	DATA 3	22	"
5	DATA 4	23	"
6	DATA 5	24	"
7	DATA 6	25	"
8	DATA 7	26	"
9	DATA 8	27	"
10	ACK	28	"
11	BUSY	29	"
12	PE	30	"
13	SLCT	31	INIT
14	AUTO FEED	32	FAULT
15	NC	33	GND
16	SIGNAL GND	34	NC
17	FRAME GND	35	NC
18	NC	36	SLCT

Drawer Connector

Pin No.	Signal name	Direction
1	Frame ground	-
2	Drawer kick-out drive signal 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick-out drive signal 2	Output
6	Signal ground	-

Appendix B
Specification

| Printer	Printing method	Serial impact dot matrix
	Number of head pin	9 wires
	Printing direction	Bi-directional
	Lines per second	Approx. 3.5 LPS
	Characters per line	40 (9*7), 32(9*9)
Ribbon	Ribbon type	Cartridge type
	Color	Red & Black
	Ribbon life	Approx. Red (0.8 Million characters), Black(1.5 Million characters)
Paper	Paper type	Roll paper
	Paper width	W76mm ¡¾0.5mm (2.99" ¡¾0.22')
	Roll diameter	Max. φ80mm (3.14')
	Thickness	0.06mm ~ 0.085mm (0.002"~ 0.003')
Adapter	Overall dimensions	115mm * 70mm * 58mm (4.53"* 2.77"* 2.29")
	Weight	1023gram (2.26lbs)
	Types	AD-1000A : U.S.A. (120 V / 60 Hz) AD-1000B : Europe (230V/50Hz) AD-1000C : UK (230V/50Hz) AD-1000D : AUSTRALIA (230V/50Hz)
Auto Cutter	Cutter type	Gillotine type
	Cutting width	Max. 85 mm
	Cutting thickness	Max. 0.1mm
ETC	Data buffer	6k bytes
	Overall dimension	SRP-250A/AP, SRP-250C/CP: 177(W)*277(D)*141(H)mm(7.00'*10.9'*5.57') SRP-250B/BP: 177(W)*277(D)*186(H)mm(7.00'*10.9'*7.32') SRP-250D/DP: 177(W)*284(D)*183(H)mm(7.00'*11.2'*7.19')
	Weight	Weight(printer only) : Approx. 2.4kg (5.3lbs) Weight(with box & accessories) : Approx. 4.5 kg (9.8lbs)
	Rating	DC 27 V, 1.2 A
	Power consumption	Standby : 16 W, Operation : 25 W
	EMI	FCC class A, CE
	Safety standards	UL/CSA, TUV,CE
	Reliability	MCBF : 5,000,000 lines (Except print head life) Print head life : 150,000,000 Dots
	Operation temperature	0¡É~ 40¡É(32¢µ~ 104¢µ
	Operation humidity	30% ~ 80%
	Storage temperature	-10¡É~ 50¡É(14¢µ~ 122¢µ
	Storage humidity	10% ~ 95%

Appendix C
Removing Jammed Paper (A)

When the paper is jammed near the head carriage.

1) Open the front-cover and rear-cover.
2) Loosen the screw securing the head cover as shown the illustration.
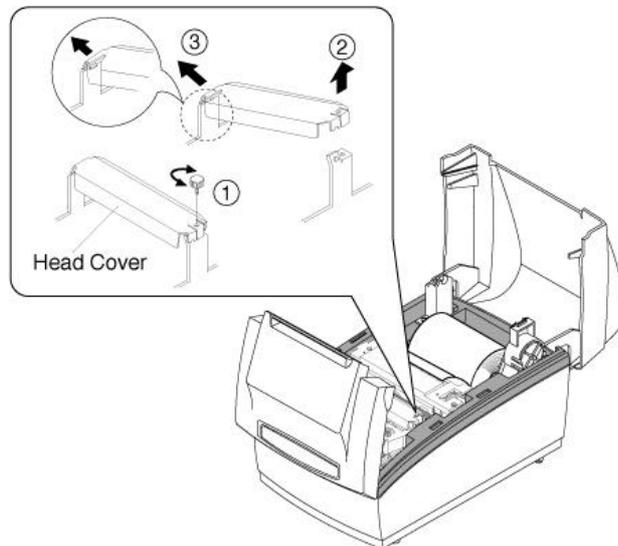
Head Cover

CAUTION : The printer head becomes very hot during printing.
Allow it to be cool before you reach into the printer.

3) Remove the roll paper from the printer.
4) Remove the ribbon cassette.
5) Move the head carriage to the reverse direction of paper jammed by 1st gear reduction as shown illustration.
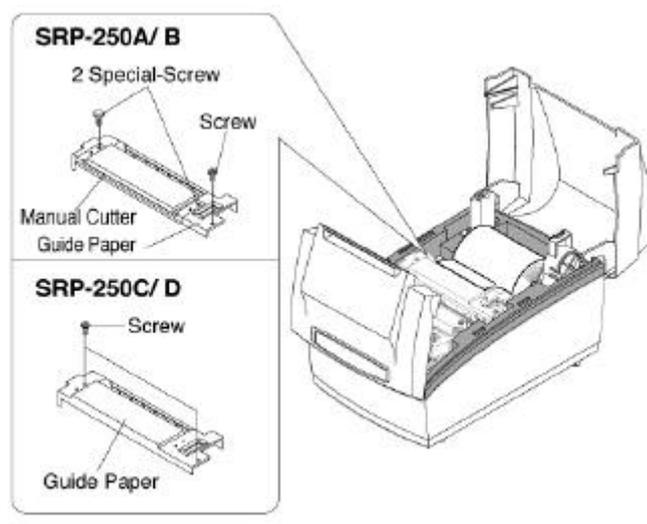6) Remove the jammed paper by rotating the paper-feed knob.
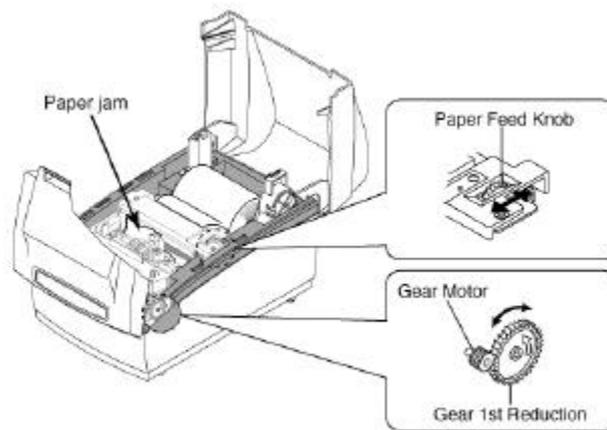
7) Replace the head cover and secure it with screw.
8) Replace the ribbon cassette and roll paper, then close the printer cover.

# Removing Jammed Paper (B)

Paper is jammed when you insert the paper.

1) Open the front-cover and rear-cover.
2) Loosen the screw securing the guide-paper as shown the illustration.

CAUTION : The printer head becomes very hot during printing.
          Allow it to be cool before you reach into the printer.

3) Remove the roll paper from the printer.
4) Remove the ribbon cassette.

5) Remove the jammed paper by rotating the paper-feed knob.

Paper jam

Paper Feed Knob
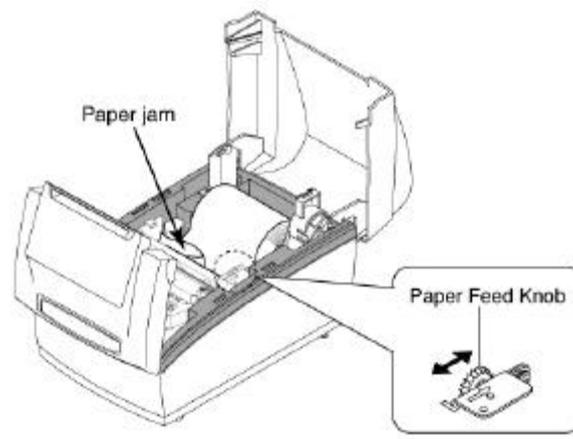
6) Replace the head cover and secure it with screw.
7) Replace the ribbon cassette and roll paper, then close the printer cover.

CONTROL CODES

STAR mode

Control code	Hexadecimal code	Function
<ESC> "C" n	1B 43 n	Set page length at n lines
<ESC> "R" n	1B 52 n	Select international character set. Default is according to the dip switch settings 3, 4 and 5.
<ESC> "M"	1B 4D	Select 7 × 7(Half dots) character size(Default setting)
<ESC> "P"	1B 50	Select 9×7(Half dots) character size
<SO>	0E	Select expanded character mode
<SI>	0F	Select inverted print mode
<DC2>	12	Cancel inverted print mode
<DC4>	14	Cancel expanded character mode(Default setting)
<ESC> "W" "1" <ESC> "W" <1>	1B 57 31 1B 57 01	Select expanded character mode
<ESC> "W" "0" <ESC> "W" <0>	1B 57 30 1B 57 00	Cancel expanded character mode (Default setting)
<ESC> "4"	1B 34	Red color print selection
<ESC> "5"	1B 35	Red color print deselection
<ESC> "E"	1B 45	Emphasized print mode selection
<ESC> "F"	1B 46	Emphasized print mode deselection (Default setting)
<ESC> "a" n	1B 61 n	Feed paper n lines
<ESC><BEL>n1 n2	1B 07 n1 n2	Adjust drive pulse width for peripheral unit(Default setting)
<BEL>	07	Deferred drive command "A" for peripheral unit 1
<FS>	1C	Immediate drive command "B" for peripheral unit 1
<SUB>	1A	Immediate drive command for peripheral unit 2
<EM>	19	Immediate drive command for peripheral unit 2
<CAN>	18	Cancel print data in buffer
<ESC> "@"	1B 40	Initialize printer
<ESC> "e" "0" <ESC> "e" <0>	1B 65 30 1B 65 00	FEED switch valid (Default setting)
<DC3>	13	Set deselect mode
<DC4>	14	Set select mode
<ESC> U n	1B 55 n	Set or Cancel uni-direction mode
<ESC> - n	1B 2D n	Set or Cancel underline mode
Control code	Hexadecimal code	Function
<ESC> "e" "1" <ESC> "e" <1>	1B 65 31 1B 65 01	FEED switch invalid

<ESC> "z" "1"	1B 7A 31	Set 1/6 inch line feed
<ESC> "z" <1>	1B 7A 01	
<FF>	0C	Page feed (form feed)
<ESC> d "0"	1B 64 30	Full cut
<ESC> d "1"	1B 64 31	Partial cut

CITIZEN mode

Function code	Hexadecimal code	Function
<FF> "n"	0C + n	"n" -lines paper feed command
<SO>	0E	Enlarged character command
<SI>	0F	Normal character command
<DC1>	11	Initial set command
<DC2>	12	Inverted character command
<DC3>	13	Red color print command
<CAN>	18	Clear command
<ESC> "P" "0"	1B, 50, 00	Paper full cut command
<ESC> "P" "1"	1B, 50, 01	Paper partial cut command
<ESC> "-" "n"	1B, 2D, n	Underline command
<ESC> "1"	1B, 31	1/9 inch paper feed preset command
<ESC> "2"	1B, 32	2/9 inch paper feed preset command
<ESC> "C" "n"	1B, 43, n	Page length set command
<ESC> "f" "1"	1B, 66, 01	Form feed command
<SUB>	1A	Second drawer drive command
<FS>	1C	First drawer quick drive command
<ESC><BEL> n1 n2	1B, 07, n1, n2	Drive pulse setting command for the first drawer
<BEL>	07	First drawer drive command
<ESC> "U" "1"	1B 55 31	Select uni-directional print mode on/off
<ESC> "U" <1>	1B 55 01	
<ESC> "@"	1B 40	Initialize printer
<ESC> "d" "0"	1B 64 30	Trigger auto-cutter drive (full cut)
<ESC> "d" <0>	1B 64 01	
<ESC> "d" "1"	1B 64 31	Trigger auto-cutter drive (partial cut)
<ESC> "d" <1>	1B 64 01	
<ESC> "W" "1"	1B 57 31	Select expanded character mode on/off
<ESC> "W" <1>	1B 57 01	
<ESC> "y" n	1B 79 n	Set n/144 inch line feed